

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims:

1. (Previously Amended) Apparatus for generating in situ in a tissue a cytotoxic agent which destroys the tissue, the apparatus comprising:
 - A. at least two electrodes adapted to be attached to the tissue;
 - B. means to apply a voltage across the electrodes to cause a current to flow through the tissue which brings about an electrochemical reaction yielding said cytotoxic agent; and
 - C. means to deliver to the tissue a reagent which, when current flows through the tissue, reacts with the material of one of the electrodes to produce said agent.
2. (Cancelled)
3. (Previously Amended) Apparatus as set forth in claim 1 in which said reagent is an electrolyte.
4. (Original) Apparatus as set forth in claim 3 in which said electrode is made of platinum and said electrolyte is ammonium dichloride.
5. (Previously Amended) Apparatus as set forth in claim 1 in which one electrode is hollow to form a pipe for delivering said reagent to said tissue.
6. (Previously Amended) Apparatus as set forth in claim 1 further including a sensor to detect the cytotoxic agent in said tissue and to produce a signal whose magnitude depends on the

potency of the agent, and means responsive to said signal to control the current to optimize the efficacy of the agent.

7. (Previously Amended) Apparatus as set forth in claim 1 in which one of the electrodes is formed from a metal in the platinum class.

8. (Previously Amended) Apparatus as set forth in claim 1 in which one of the electrodes are formed from titanium, and said reagent is reactive therewith.

9. (Previously Amended) Apparatus as set forth in claim 1 further including means to deliver to the tissue a photosensitive electrolyte, and optical means to illuminate the electrolyte.

10. (Currently Amended) A kit for treating specified tissue in a patient, said [[apparatus]] kit comprising:

A. a working electrode and a counterelectrode, each electrode adapted to be positioned in said patient within or near said tissue;

B. means for applying a voltage effective to induce a current between the electrodes;

C. means for regulating the voltage across the electrodes;

D. a precursor of a compound having cytotoxic activity against the tissue; and

E. means for introducing said precursor into said patient into or near said tissue, said precursor being activated by reaction with at least one of said electrodes, wherein an electrochemical reaction yields the cytotoxic activity.

11. (Original) The kit of claim 10, wherein at least one of said electrodes is adapted to receive a fiber optic for delivering light into or near said tissue effective to activate said precursor.

12. (Currently Amended) The kit of claim 10, wherein one of said electrodes is hollow and [[porous]] perforated and said precursor is introduced thereinto.

13. (Original) The kit of claim 10, wherein said voltage is regulated in a pulsed manner effective to deliver pulsed dosages of said precursor.

14. (Original) The kit of claim 10, wherein said voltage is regulated in a pulsed manner effective to activate said precursor in pulsed dosages.

15. (Previously Amended) A method for treating a tissue in a patient, comprising:
A. providing an in vivo current passing through or near said tissue;
B. providing in or near said tissue a precursor of a compound having cytotoxic activity against said tissue; and
C. activating said precursor to be cytotoxic, wherein said current is provided by electrodes and said precursor is activated by reaction with at least one of said electrodes.

16. (Original) The method of claim 15, wherein said precursor is activated by said current.

17. (Cancelled)

18. (Original) The method of claim 15, wherein said precursor is activated by light.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) The method of claim [[21]] 67, wherein the activation of the precursor is regulated as a function of the monitored amount of activated compound.

23. (Currently Amended) The method of claim 15, wherein said reaction is [[catalytic]] catalyzed.

24. (Previously Amended) The method of claim 15, wherein said electrode is consumed by reaction with said precursor.

25. (Cancelled)

26. (Currently Amended) The method of claim ~~[[25]]~~ 68, wherein said metal is selected from the group consisting of Pt, Pd, Ru, Rh, Os, Ir, and mixtures thereof.

27. (Currently Amended) The method of claim 24, wherein said [[activated]] compound comprises a metal.

28. (Original) The method of claim 27, wherein said metal is selected from the group consisting of Pt, Pd, Ru, Rh, Os, Ir, and mixtures thereof.

29. (Original) The method of claim 15, wherein the patient is a human.

30. (Original) The method of claim 15, wherein the patient is a non-human.

31. (Currently Amended) The method of claim ~~[[19]]~~ 65, wherein at least two compounds are administered simultaneously.

32. (Original) The method of claim 31, wherein said compounds are activated simultaneously.

33. (Original) The method of claim 31, wherein said compounds are activated serially.

34. (Currently Amended) The method of claim [[19]] 65, wherein at least two compounds are administered serially.

35. (Original) Apparatus as set forth in claim 1, wherein the tissue is tumorous.

36. (Previously Amended) The method of claim 15, wherein the tissue is tumorous.

37. (New) Apparatus for generating in situ in a tissue an agent which destroys the tissue, the apparatus comprising:

- A. at least two electrodes adapted to be attached to the tissue;
- B. circuitry to apply a voltage across the electrodes to cause a current to flow through the tissue which brings about an electrochemical reaction yielding said agent;
- C. a sensor to detect the agent in said tissue and to produce a signal one of whose parameters depends on at least one of the potency and activity of the agent, and
- D. a processor responsive to said signal to control said current to optimize the efficacy of said agent.

38. (New) Apparatus as set forth in claim 37 in which one electrode is hollow to form a pipe for delivering a reagent to said tissue.

39. (New) Apparatus as set forth in claim 37 further comprising a delivery system to deliver to the tissue a photosensitive agent, and an optical system to illuminate the agent.

40. (New) The apparatus of claim 37 wherein the at least one of the electrodes has a very large effective surface area to minimize the effects of polarization.

41. (New) The apparatus of claim 37 wherein at least one of said electrodes comprises an alloy of gallium.

42. (New) The apparatus of claim 37 wherein the electrode material controls at least one of the course and speed of the reactions whose products are said agent.

43. (New) The apparatus of claim 37 wherein said agent is cisplatin.

44. (New) The apparatus of claim 37 wherein said sensor measures at least one of Ca^{++} , and pO_2 .

45. (New) A kit for treating specified tissue in a patient, said kit comprising:
A. a working electrode and a counterelectrode, each electrode adapted to be positioned in said patient within or near said tissue;
B. circuitry for applying a voltage effective to induce a current between the electrodes;
C. a voltage regulator for regulating the voltage across the electrodes;
D. a precursor of a compound having activity against the tissue; and
E. a system for introducing said precursor into said patient into or near said tissue, said precursor being activated by a catalyzed reaction with at least one of said electrodes wherein an electrochemical reaction yields the activity.

46. (New) The kit of claim 45, wherein one of said electrodes is hollow and has apertures, and said precursor is introduced thereinto.

47. (New) The kit of claim 45, wherein said voltage is regulated in a pulsed manner effective to deliver pulsed dosages of said precursor.

48. (New) The kit of claim 45, wherein said voltage is regulated in a pulsed manner effective to activate said precursor in pulsed dosages.

49. (New) A method for treating a tissue in a patient, comprising:
A. providing an in vivo electrical current passing through or near said tissue;

B. providing in or near said tissue a precursor of a compound having activity against said tissue; and

C. activating said precursor, wherein said current is provided by electrodes and said precursor is activated by catalyzed reaction aided by at least one of said electrodes.

50. (New) The method as set forth in claim 49 in which one electrode is hollow to form a pipe for delivering a reagent to said tissue.

51. (New) The method as set forth in claim 49 further comprising delivering to the tissue a photosensitive agent, and illuminating the agent.

52. (New) The method of claim 49 wherein the at least two electrodes comprise at least two concentric electrodes sized to minimize the effects of polarization.

53. (New) The method of claim 49 wherein at least one of said electrodes comprises an alloy of gallium.

54. (New) The method of claim 49 further comprising controlling, using the electrode material, at least one of the course and speed of the reactions whose products are said agent.

55. (New) The method of claim 49 wherein said agent is cisplatin.

56. (New) The method of claim 49 further comprising measuring at least one of Ca^{++} , and pO_2 .

57. (New) The method of claim 49, comprising providing a plurality of different precursor compounds for activation.

58. (New) The method of claim 49 further comprising monitoring the amount of precursor activated in vivo.

59. (New) The method of claim 49 further comprising regulating the activation of the precursor as a function of a monitored amount of activated compound.

60. (New) The method of claim 57, wherein said compounds are activated simultaneously.

61. (New) The method of claim 57, wherein said compounds are activated serially.

62. (New) The method of claim 49 further comprising controlling the electrical current to minimize any necrosis cell death.

63. (New) The method of claim 49 further comprising introducing a non-cytotoxic isomer into the tissue and exposing it to light energy resulting in photo-assisted isomerization.

64. (New) The apparatus of claim 40 wherein one of said electrodes is a counterelectrode and the counterelectrode has a very large porous surface area sufficient to use said counterelectrode as a reference electrode.

65. (New) A method for treating a tissue in a patient, comprising:
A. providing an in vivo current passing through or near said tissue;
B. providing in or near said tissue precursors of a plurality of different compounds, each compound having cytotoxic activity against said tissue; and
C. activating said precursors to be cytotoxic.

66. (New) A method for treating a tissue in a patient, comprising:
A. providing an in vivo current passing through or near said tissue;
B. providing in or near said tissue a precursor of a compound having cytotoxic activity

against said tissue; and

C. activating said precursor to be cytotoxic and wherein said activating is cyclical.

67. (New) A method for treating a tissue in a patient, comprising:
- A. providing an in vivo current passing through or near said tissue;
 - B. providing in or near said tissue a precursor of a compound having cytotoxic activity against said tissue;
 - C. activating said precursor to be cytotoxic; and
 - D. monitoring in vivo the amount of precursor which is activated.

68. (New) A method for treating a tissue in a patient, comprising:
- A. providing an in vivo current passing through or near said tissue;
 - B. providing in or near said tissue a precursor of a compound having cytotoxic activity against said tissue; and
 - C. activating said precursor to be cytotoxic, and wherein said precursor comprises a metal.

69. (New) The apparatus of claim 40 wherein each very large surface area electrode has a very large area due to the surface porosity of the electrode material.

70. (New) The apparatus of claim 40 wherein said very large area electrode can act as a reference electrode.